BLUNT ABDOMINAL TRAUMA

Original Release/Approval		18 Dec 2004	Note: This CPG requires an annual review.	
Reviewed:	Jun 2010	Approved:	30 Jun 2010	
Supersedes:	Blunt Abdominal Trauma, 7 Nov 08			
☐ Minor Changes (***or)***	☒ ***Changes are substantial and require a thorough reading of this CPG***			***(or)***
☐ Significant Changes				

1. Goal. To provide guidance on the management of combat casualties who sustain blunt abdominal trauma (BAT).

2. Background.

a. Unlike penetrating abdominal injuries where the decision to operate is relatively straight forward, those combat casualties that sustain blunt abdominal trauma offer more of a diagnostic and clinical challenge. With the improvements in body armor, truncal injury has decreased despite increasingly more lethal weapon systems. With the advent of Improvised Explosive Devices (IEDs), however, more casualties are presenting with evidence of BAT. While CT scans are available to assist the provider in decision making at a Level III facility, providers at far forward surgical units must decide to operate based on physical and Focused Abdominal Sonography in Trauma (FAST) exams.

b. It is incumbent on the senior surgeon at each facility to ensure the staff understands their resource limitations and the inherent limitations associated with the use of the FAST exam to diagnose a hemoperitoneum. For those patients with a positive FAST, exploratory laparotomy should be undertaken immediately. ***Rarely***, patients with a positive FAST and/or CT scan may be managed non-operatively <u>if they are already at a Level III facility that can ensure adequate clinical follow-up and evaluation</u>. ***DO NOT*** aeromedically evacuate patients out of the CENTCOM AOR who have a positive FAST exam and/or CT evidence of hemoperitoneum prior to completely assessing and controlling any and all ongoing intraabdominal hemorrhage. The benefits of non-operative management ***do not*** outweigh the risks of an in-flight hemorrhagic emergency with no potential for therapeutic surgical intervention.

c. ***All grade III-V splenic injuries should undergo splenectomy due to the high failure rate of non-operative management with or without splenic embolization.*** Lacerated spleens of any grade with active hemorrhage encountered during laparotomy for any reason are best managed by splenectomy. In Level III facilities with Interventional Radiology capabilities, consideration may be given to embolization of grade 1/2 splenic injuries if the patient has NO other indication for exploratory laparotomy. These patients should be hemodynamically stable but with evidence of active bleeding or pseudoaneurysm and no evidence of hemoperitoneum on computed tomography. Ideally, these patients should be monitored in the MTF for up to 3 days prior to evacuation to another MTF. Additionally, the patient's history should be discussed between the referring and accepting surgeons prior to evacuation. This is based on a literature review showing 99-100% success rate of non-operative management for grade 1/2 splenic

injuries. Angiography and embolization for blunt injuries of other visceral organs may be used as an adjunctive procedure and should be determined on a case by case basis.

d. Nothing in this CPG or Appendix precludes the use of exploratory laparotomy for BAT when either the clinical or tactical situation warrants.

3. Recommendations. See appendix A

4. Responsibilities. It is the trauma team leader's responsibility to ensure familiarity and appropriate compliance with this CPG.

5. References.

[1] *Emergency War Surgery Handbook*

[2] Nonoperative management of Blunt Splenic Injury: A 5-year experience. Haan JM et al. J Trauma. 2005;58:492-498.

[3] Correlation of Multidetector CT Findings with Splenic Arteriography and Surgery: Prospective Study in 392 patients. Marmery H et al. J Am Coll Surg. 2008;206:685-693.

[4] CT Findings after Embolization for Blunt Splenic Trauma. Killeen KL et al. J Vasc Interv Radiol. 2001;12:209-214.

[5] Observation for Nonoperative Management of the Spleen: How Long is Long Enough? McCray VW et al. J Trauma 2008;65:1354-1358.

[6] Proximal Splenic Angioembolization Does Not Improve Outcomes in Treating Blunt Splenic Injuries Compared with Splenectomy: A Cohort Analysis. Duchesne JC et al. J Trauma 2008;65:1346-1353.

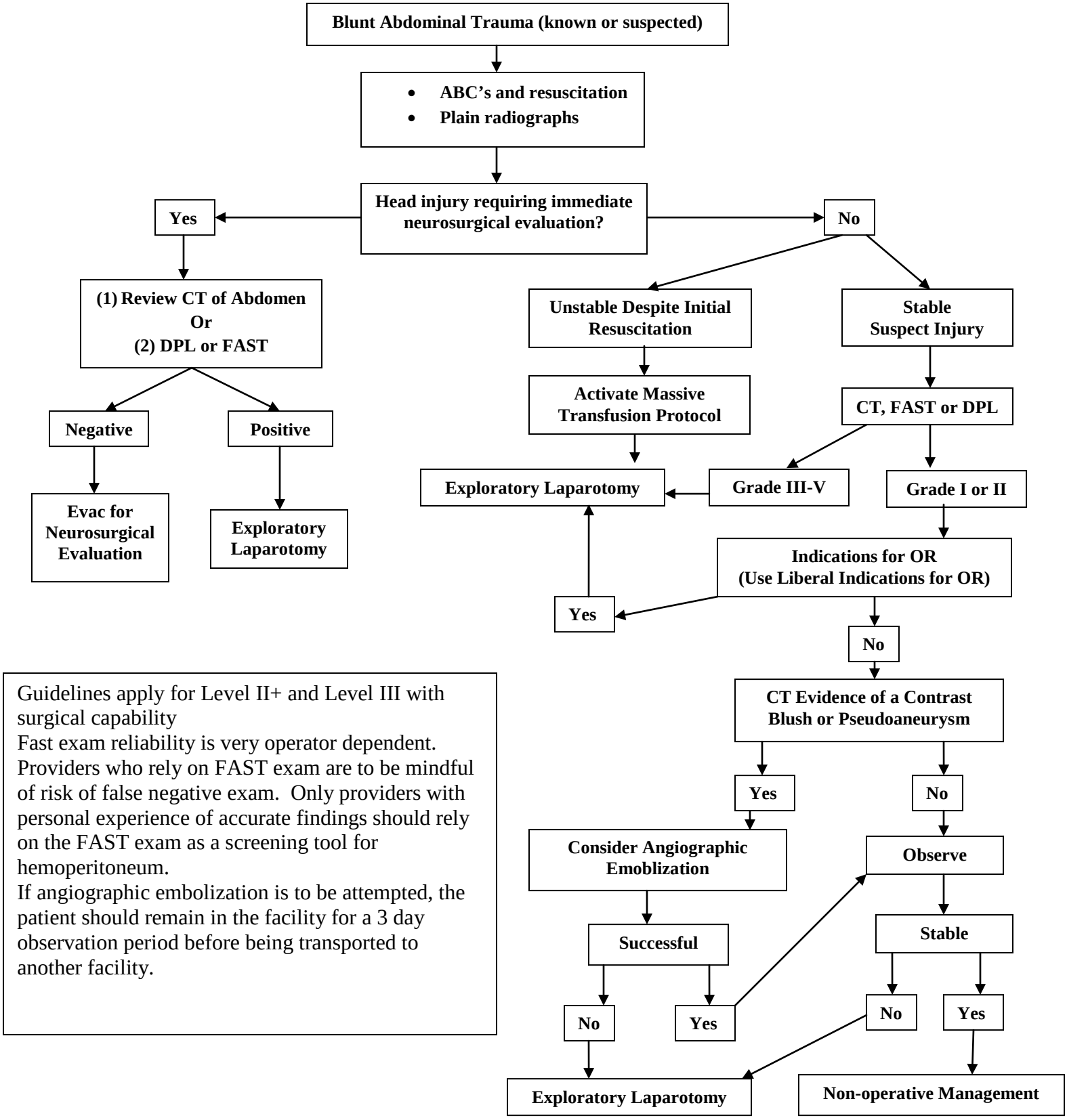
[7] Angiographic Embolization for Liver Injuries: Low Mortality, High Morbidity. Mohr AM et al. J Trauma 2003;55:1077-1082.

[8] Abdomen--Interventions for Solid Organ Injury. Holden A. Int J Care Injured 2008;39:1275-1289.

Approved by CENTCOM JTTS Director and Deputy Director and CENTCOM SG

Opinions, interpretations, conclusions, and recommendations are those of the authors and are not necessarily endorsed by the Services or DoD

APPENDIX A



Guidelines apply for Level II+ and Level III with surgical capability
Fast exam reliability is very operator dependent. Providers who rely on FAST exam are to be mindful of risk of false negative exam. Only providers with personal experience of accurate findings should rely on the FAST exam as a screening tool for hemoperitoneum.
If angiographic embolization is to be attempted, the patient should remain in the facility for a 3 day observation period before being transported to another facility.